HP Firmware Manager User's Guide

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About This Document

This document describes how to use the HP Firmware Manager (HP FM) tools to update system firmware.

Intended Audience

This document is for system administrators and users of Integrity and PA-RISC systems who manage and update system firmware.

Document Organization

The following table describes how this document is organized:

Chapter	Describes
Chapter 1, "HP Firmware Manager (FM)"	The purpose and uses of the HP Firmware Manager (FM).
Chapter 2, "Updating Firmware Using HP OS Initiated Firmware Manager"	How to use HP Firmware Manager to update firmware on a system that is running the HP-UX, Linux, or Windows® operating system.
Chapter 3, "Updating Firmware Using HP Offline Firmware Manager"	How to use the HP Firmware Manager to update firmware on an Integrity system that is not running an operating system.

Typographic Conventions

This document uses the following typographical conventions:

`%`, `$`, or `#`	A percent sign represents the C shell system prompt. A dollar sign represents the system prompt for the Bourne, Korn, and POSIX shells. A number sign represents the superuser prompt.
audit(5)	A manpage. The manpage name is *audit*, and it is located in Section 5.
`Command`	A command name or qualified command phrase.
`Computer output`	Text displayed by the computer.
Ctrl+x	A key sequence. A sequence such as **Ctrl+x** indicates that you must hold down the key labeled **Ctrl** while you press another key or mouse button.
`ENVIRONMENT VARIABLE`	The name of an environment variable, for example, `PATH`.
[ERROR NAME]	The name of an error, usually returned in the `errno` variable.
Key	The name of a keyboard key. **Return** and **Enter** both refer to the same key.
Term	The defined use of an important word or phrase.
`User input`	Commands and other text that you type.
`Variable`	The name of a placeholder in a command, function, or other syntax display that you replace with an actual value.
[]	The contents are optional in syntax. If the contents are a list separated by `|`, you must choose one of the items.
{}	The contents are required in syntax. If the contents are a list separated by `|`, you must choose one of the items.
...	The preceding element can be repeated an arbitrary number of times.
⊚	Indicates the continuation of a code example.
|	Separates items in a list of choices.

WARNING	A warning calls attention to important information that if not understood or followed will result in personal injury or nonrecoverable system problems.
CAUTION	A caution calls attention to important information that if not understood or followed will result in data loss, data corruption, or damage to hardware or software.
IMPORTANT	This alert provides essential information to explain a concept or to complete a task
NOTE	A note contains additional information to emphasize or supplement important points of the main text.

HP Encourages Your Comments

HP encourages your comments concerning this document. We are truly committed to providing documentation that meets your needs. All comments are appreciated. Include the document title, publishing date, revision number and manufacturing part number (if available), and any comment, error found, or suggestion for improvement that you have concerning this document. Please address your comments to feedback@fc.hp.com and note that you will not receive an immediate reply.

1 HP Firmware Manager (FM)

HP Firmware Manager (HP FM) is a set of tools for updating firmware on an Integrity or PA-RISC system. HP FM is packaged with firmware and distributed through the web. You can use HP FM to update firmware on a system that is running the HP-UX, Windows, or Linux operating system or on a system that is not running an operating system.

This chapter describes the features and benefits of the HP FM software and how to download and use the most suitable HP FM option for your system.

This chapter addressing the following topics:

- HP FM Features and Benefits
- HP FM Update Methods
- Types of Updates
- Downloading Firmware Packages
- Subscribing to Receive Firmware Update Notices Automatically

HP FM Features and Benefits

The following lists some of the HP FM features and benefits:

- Web-based download of firmware packages
- Automatic notification of new firmware updates as they become available
- User-friendly interface to perform the firmware update process
- Reduce time to manage your IT environment
- Control over firmware update processes and schedule

HP FM Update Methods

HP FM provides two methods of updating firmware. The method to use depends on whether or not the operating system is running on the system:

- HP OS-Initiated Firmware Manager (HP OSIFM)

  If the HP-UX, Linux, or Windows operating system is running on the system, use HP OSIFM. HP OSIFM provides a firmware package in a patch or product file for HP-UX and a Smart Component file for the Windows and Linux. You download the patch, product, or Smart Component to a system, and then use the operating system to update the firmware.

- HP Offline Firmware Manager (HP OFM)

  If the operating system is not running on the system, or to update the firmware for a device in the boot path, use HP OFM. HP OFM provides a firmware package as an `.ISO` image that you download to a system to create a CD. You then use the CD to boot the system and update the firmware. HP OFM is available only for Integrity systems.

For a list of systems and operating systems that support HP OSIFM and HP OFM, see the HP Integrity and HP 9000 Servers Firmware Update Options section on the Business Support Center web page at:
http://h20000.www2.hp.com/bizsupport/TechSupport/Document.jsp?objectID=c00399523

Types of Updates

Using HP FM, you can perform the following types of firmware updates:

Upgrade	Selecting a firmware update that is newer than what is installed upgrades the firmware to the selected version.
Downgrade	Selecting a firmware update that is older than what is installed downgrades the firmware to the selected version.

Reinstallation	Selecting a firmware update that is the same as what is installed reinstalls the firmware to the same version (if the firmware installer supports reinstallations).

Downloading Firmware Packages

Each firmware package is intended for a specific type of system or device and updates the firmware for that system or device only. Attempting to use a firmware package on a system or device other than intended will not update the firmware. Follow these steps to download a firmware package:

1. Go to the website at: http://www.hp.com.
2. Select Software & Driver Downloads.

   The Software & Driver Downloads page is displayed.
3. Enter the system type in the product field and press **Enter**.

   A Product search results page is displayed.
4. Select the desired system from the list.

   A Software & Driver Downloads page is displayed that lists the available operating systems for the system.
5. Select the desired operating system from the list.

   A Software & Driver Downloads page is displayed that lists the available firmware packages for the system.
6. Select the desired firmware package.

   A table of available firmware releases similar to Figure 1-1 is displayed, which shows the following:
   - A description of the firmware package.
   - The current version of the firmware package and the type of firmware package:
     - ISO HPOFM identifies an HP FM Offline Firmware package.
     - OSIFM identifies an HP FM Online Firmware package.
     - FTP, EFI Image, and MP Initiated are other types of firmware distribution methods.
   - The size of the download.
   - The estimated download time.
   - Previous versions information.
   - The Download button.

Figure 1-1 HP Firmware Download Table

Firmware - System

Description	Current version	Size (MB)	Estimated download time	Previous version	
HP rx8640/rx7640 and Sever Expansion Unit (SEU) Firmware	2.0 (ISO HPOFM) 20 Sep 2006	11.8	56K: 28m 512K: 3m	1.0 (ISO HPOFM) 15 Sep 2006	Download
HP rx8640/rx7640 and Sever Expansion Unit (SEU) Firmware	2.0 (HPUX OSIFM) 20 Sep 2006	17.4	56K: 42m 512K: 4m	1.0 (HPUX OSIFM) 15 Sep 2006	Download
HP rx8640/rx7640 and Sever Expansion Unit (SEU) Firmware	2.0 (MP Initiated) 20 Sep 2006	7.5	56K: 18m 512K: 1m	1.0 (MP Initiated) 6 Apr 2006	Download

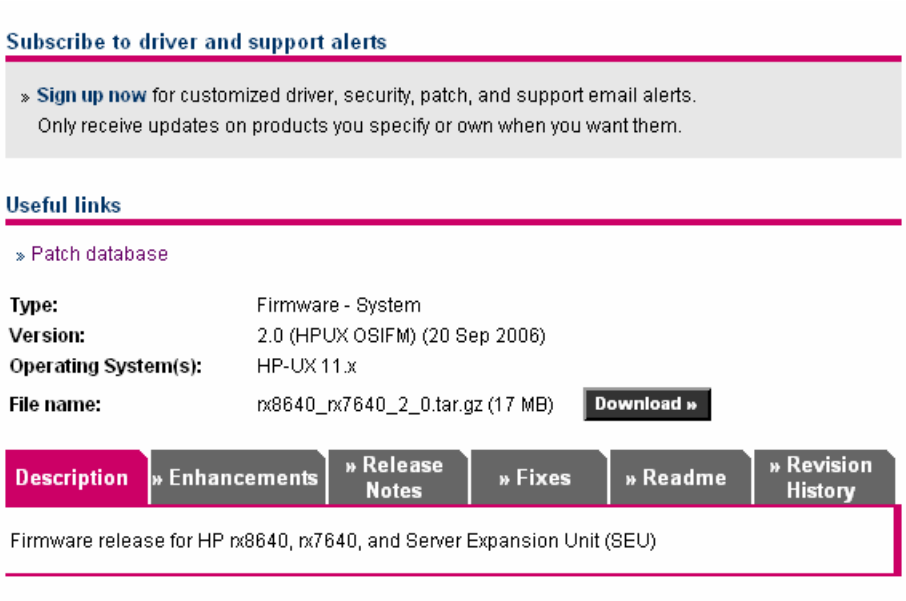
7. Click on the Description link. A product page similar to Figure 1-2 is displayed, which shows the following:

- General information about the firmware package.
- Tabs to pages that contain more information about the firmware package, such as enhancements, fixes, release notes, and so on.

NOTE: The release notes for a firmware package contain the latest information about the firmware package, prerequisite tasks that you must perform before updating firmware, and update instructions. You must have the release notes available when you update firmware.

- A Download button.
- A Content feedback section, where you can provide information about your experience downloading a firmware package.

Figure 1-2 Product Page


Subscribe to driver and support alerts
» Sign up now for customized driver, security, patch, and support email alerts.
Only receive updates on products you specify or own when you want them.
Useful links
» Patch database
Type: Firmware - System
Version: 2.0 (HPUX OSIFM) (20 Sep 2006)
Operating System(s): HP-UX 11.x
File name: rx8640_rx7640_2_0.tar.gz (17 MB)
Download »
Description
» Enhancements
» Release Notes
» Fixes
» Readme
» Revision History
Firmware release for HP rx8640, rx7640, and Server Expansion Unit (SEU)

8. Download a firmware package by clicking Download and following the instructions on the screen.

NOTE: Always download firmware files in binary mode.

If you download an OSIFM firmware package, you download a file that contains the firmware package in one of the following types of files:

- For HP-UX on an entry-class system, one of the following:
  - A patch with the name of `PHSS_`*nnnnn*, where *nnnnn* indicates the patch number
  - A product with the name of *productname_nnnn*, where *nnnn* indicates the product number.
- For HP-UX on a mid-range or high-end system, a product with the name of `IPF_`*nnnn*`.depot`, where *nnnn* indicates the product number.
- For Linux , a Smart Component file with the name of `CP`*nnnnnn*`.scexe` , where *nnnnnn* indicates the Smart Component number.
- For Windows, a Smart Component file with the name of `cp`*nnnnnn*`.exe`, where *nnnnnn* indicates the Smart Component number.

See Chapter 2 for information on how to perform an firmware update on a system running the HP UX, Linux, or Windows operating system.

If you download an ISO HPOFM firmware package, you download an `.ISO` file that contains the firmware package from which you must create a CD to use to boot an Integrity system. See Chapter 3 for more information.

Subscribing to Receive Firmware Releases Notices Automatically

You can subscribe to automatically receive firmware release notices when new firmware packages are available by creating a profile at the following HP website: http://www.hp.com/go/myhpalerts

Creating a profile requires that you provide the following information, which is used only to automatically notify you about selected firmware updates notices:

- Products for which you would like to receive firmware release notices
- Preferred notification method:
  - HTML email
  - Text email
  - RSS (Really Simple Syndication)
- Frequency of notification:
  - As they become available
  - Weekly
  - Monthly
- Information about you, such as your name and email address

2 Updating Firmware Using HP OS Initiated Firmware Manager

Downloading an HP OS-Initiated Firmware manager (OSIFM) firmware package downloads a file that contains a firmware release in a patch or product for HP-UX or a Smart Component for Linux or Windows.

This chapter addresses the following topics:

- Updating firmware on an HP-UX System
- Updating firmware on a Linux System
- Updating firmware on a Windows System

Updating Firmware on an HP-UX System

Downloading an HP OSIFM firmware package on a system running the HP-UX operating system downloads a file that contains the firmware package in either a patch or a product, depending on the type of system:

- A patch or product for an entry-class system
- A product for a mid-range or high-end system

To determine if the firmware package is in a patch or product, see the release notes for a firmware package.

This section describes how to update firmware on an entry-class, mid-range, or high-end system running the HP-UX operating system. It describes the following tasks:

- Tasks to perform before updating firmware
- Upgrading firmware on an entry-class system
- Upgrading firmware on a mid-range or high-end system
- Verifying the firmware update

For procedures on how to downgrade or reinstall firmware, see the firmware package release notes.

Before Updating Firmware

The following lists tasks that you must complete before updating firmware on a system running the HP-UX operating system:

- Perform all the tasks listed in the prerequisites section in the firmware releases notes. For information on obtaining release notes for a firmware package, see step 7 in Downloading Firmware Packages.
- Schedule a time to update firmware when it is convenient to reboot the system.
- Review the HP *Support Line User Guide* or the HP support terms and conditions for precautions, scope of license, restrictions, and limitation of liability and warranties.
- Do not update firmware during an operating system installation, update-UX, or dynamic root disk session.
- Do not update firmware on the iLO Management Processor over the network while updating system firmware.
- Back up the system. For additional information, see the administration guide that came with the operating system.
- For entry-class systems, clear the system event logs. Follow these steps to clear the system event logs:
  1. Establish a `telnet` session with the iLO Management Processor (MP).
  2. Log in to the iLO Management Processor as an administrator.

3. Display the show logs menu, for example:

   # **SL**

   A show logs menu appears.

4. At the `Enter menu item or [Ctrl-B] to Quit:` prompt, enter **c**.
5. At the `Are you sure you want to clear all logs? (Y/[N]):` prompt, enter **y**.

   The following message appears:

   ```
   -> Logs have been cleared.
   ```

Upgrading Firmware on an Entry-Class System

You can upgrade firmware on an entry-class system from either a product or a patch. This section describes how to upgrade firmware on an entry-class system from a product and a patch. To identify whether the firmware package is in a product or patch, see the firmware package release notes.

Upgrading from a Product

Follow these steps to upgrade the firmware from a product on an entry-class system that is running the HP-UX operating system:

1. Log in as superuser.
2. Change to the `/tmp` directory:

   # **cd /tmp**

3. Download the firmware package to the `/tmp` directory as described in Downloading Firmware Packages.

   A file named *productname_nnnn* is downloaded, where *nnnn* indicates the product number.

4. Extract the files from the *productname_nnnn* file. For example:

   # **sh *productname_nnnn***

   The *productname_nnnn*`.depot` file is created.

5. Compare the firmware versions on the system to those in the package. For example, the following command displays the firmware version in the `cx2620_4_11.depot` file and firmware versions currently installed on the system:

   ```
   # /usr/sbin/swinstall -p -x autoreboot=true -x \
   mount_all_filesystems=false -x reinstall=true -x \
   allow_downdate=true -s /tmp/cx2620_4_11.depot FM_cx2620
   ```

   If the output indicates that more information can be displayed in the agent log file, enter:

   # **swjob -a log SYSTEM_NAME-0148 @ SYSTEM_NAME:/**

   where `SYSTEM_NAME-0148` is the job ID of the `swinstall` command output.

   If any errors prevent the firmware upgrade, the log also shows the error messages. You must resolve the errors before the upgrade can proceed.

6. Start the firmware upgrade. For example, the following command upgrades the system with the firmware in the `cx2620_4_11.depot` file:

   ```
   # /usr/sbin/swinstall -x autoreboot=true -x mount_all_filesystems=false \
   -x reinstall=true -x allow_downdate=true -s /tmp/cx2620_4_11.depot FM_cx2620
   ```

After the firmware is upgraded, the current partition will reset and boot HP-UX.

7. To verify that the firmware upgrade is successful, see Verify the HP-UX Firmware Update.

Upgrading from a Patch

Follow these steps to upgrade the firmware from a patch on an entry-class system that is running the HP-UX operating system:

1. Log in as superuser.
2. Change to the `/tmp` directory:

   # **`cd /tmp`**

3. Download the firmware package to the `/tmp` directory as described in Downloading Firmware Packages.

   A file named `PHSS_`*`nnnnn`* is downloaded, where *nnnnn* indicates the patch number.

4. Extract the files from the `PHSS_`*`nnnnn`* file. For example:

   # **`sh PHSS_`*`nnnnn`***

   The following two files are created:

   - `PHSS_`*`nnnnn`*`.depot`, which contains the software for the firmware package.
   - `PHSS_`*`nnnnn`*`.text` , which contains these installation instructions.

5. Compare the firmware versions on the system to those in the package. For example:

   ```
   # /usr/sbin/swinstall -p -x patch_match_target=true -s \
   /tmp/PHSS_nnnnn.depot
   ```

6. Install the firmware package. For example:

   ```
   # /usr/sbin/swinstall -x autoreboot=true -x patch_match_target=true \
   -s /tmp/PHSS_nnnnn.depot
   ```

   When the firmware is upgraded, the system will reset and boot HP-UX.

Upgrading Firmware on a Mid-Range or High-End System

This section describes how to upgrade firmware from a product on a mid-range or high-end system that is running the HP-UX operating system. On a mid-range or high-end system, you can upgrade the whole complex. On a high-end system, you can additionally upgrade a specific partition or a specific partition plus the unassigned cells. This section describes how to perform these three types of upgrades.

Upgrading Firmware on the Complex

Follow these steps to upgrade firmware on the complex:

1. Select an HP-UX partition from the complex.
2. Download the firmware package to the `/tmp` directory on the selected HP-UX partition as described in Downloading Firmware Packages.

   A file named `IPF_`*`nnnn`*`.depot` is downloaded, where *nnnn* indicates the product number and firmware version. For example, `IPF_SX2000_SD_5_5d.depot` is the firmware package for the SX2000 Superdome Server.

3. Compare the firmware versions on the system to those in the package. For example, the following command displays the firmware version in the `IPF_SX2000_SD_5_5d.depot` file and the firmware that is currently installed on the system:

   ```
   # /usr/sbin/swinstall -p -x autoreboot=true -x \
   mount_all_filesystems=false -x reinstall=true -x \
   allow_downdate=true -s /tmp/IPF_SX2000_SD_5_5d.depot \
   FM_SX2000_SD
   ```

   If the output indicates that more information can be displayed in the agent log file, enter:

   # swjob -a log SYSTEM_NAME-0148 @ SYSTEM_NAME:/

   where `SYSTEM_NAME-0148` is the job ID of the `swinstall` command output.

   If any errors prevent the firmware upgrade, the log also shows the error messages. You must resolve the errors before the upgrade can proceed.

   If you select firmware that is the same as on the system, a message about removing power is also displayed.

4. Start the firmware upgrade. For example, the following command upgrades the system with the firmware in the `IPF_SX2000_SD_5_5d.depot` file.

   ```
   # /usr/sbin/swinstall -x autoreboot=true -x \
   mount_all_filesystems=false -x reinstall=true -x \
   allow_downdate=true -s /tmp/IPF_SX2000_SD_5_5d.depot \
   FM_SX2000_SD
   ```

   If instructed to remove power to the system, see Removing Power.

   After the firmware is upgraded, the current partition will reset and boot HP-UX and all other powered on partitions will reset.

5. To verify that firmware upgrade is successful, see Verify the HP-UX Firmware Update.
6. After the firmware upgrades successfully, enter the Management Processor `PE` command to power on any partitions or unassigned cells that were powered off before the upgrade.

Upgrading Firmware on a Partition

Follow these steps to upgrade firmware on a partition:

1. Select the HP-UX partition from the complex to start the firmware upgrade.
2. Download the firmware package to the `/tmp` directory on the selected HP-UX partition as described in Downloading Firmware Packages.

   A file named `IPF_`*nnnn*`.depot` is downloaded, where *nnnn* indicates the product number. For example, `IPF_SX2000_SD_5_5d.depot` is the firmware package for the SX2000 Superdome Server.

3. Install the `install_fw.sh` installation shell script in the `/usr/bin` directory. For example:

   ```
   # /usr/sbin/swinstall -s /tmp/IPF_SX2000_SD_5_5d.depot \
    FM_SX2000_SD.HPOSIFM.BIN
   ```

4. Compare the firmware versions on the system to those in the package. For example, the following command displays the firmware version in the `IPF_SX2000_SD_5_5d.depot` file and the firmware that is currently installed on the system:

   ```
   # /usr/bin/install_fw.sh -p -P -s /tmp/IPF_SX2000_SD_5_5d.depot \
   FM_SX2000_SD
   ```

   If the output indicates that more information can be displayed in the agent log file, enter:

   # swjob -a log SYSTEM_NAME-0148 @ SYSTEM_NAME:/

where SYSTEM_NAME-0148 is the job ID of the swinstall command output.

If any errors prevent the firmware upgrade, the log also shows the error messages. You must resolve the errors before the upgrade can proceed.

5. Start the firmware upgrade. For example, the following command upgrades the system with the firmware in the IPF_SX2000_SD_5_5d.depot file:

```
# /usr/bin/install_fw.sh -P -s /tmp/IPF_SX2000_SD_5_5d.depot \
FM_SX2000_SD
```

After the firmware is upgraded, the current partition will reset and boot HP-UX.

6. To verify that the firmware upgrade is successful, see Verify the HP-UX Firmware Update.

Upgrading Firmware on a Partition Plus Unassigned Cells

Follow these steps to upgrade firmware on a partition plus unassigned cells:

1. Select the HP-UX partition from the complex to start the firmware upgrade.
2. Download the firmware package to the /tmp directory on the selected HP-UX partition as described in Downloading Firmware Packages.

   A file named IPF_*nnnn*.depot is downloaded, where *nnnn* indicates the product number and firmware version. For example, IPF_SX2000_SD_5_5d.depot is the firmware package for the SX2000 Superdome Server.

3. Install the install_fw.sh installation shell script in the /usr/bin directory. For example:

```
# /usr/sbin/swinstall -s /tmp/IPF_SX2000_SD_5_5d.depot \
FM_SX2000_SD.HPOSIFM.BIN
```

4. Compare the firmware versions on the system to those in the package. For example, the following command displays the firmware version in the IPF_SX2000_SD_5_5d.depot file and the firmware that is currently installed on the system:

```
# /usr/bin/install_fw.sh -p -u -s /tmp/IPF_SX2000_SD_5_5d.depot \
FM_SX2000_SD
```

If the output indicates that more information can be displayed in the agent log file, enter:

```
# swjob -a log SYSTEM_NAME-0148 @ SYSTEM_NAME:/
```

where SYSTEM_NAME-0148 is the job ID of the swinstall command output.

If any errors prevent the firmware upgrade, the log also shows the error messages. You must resolve the errors before the upgrade can proceed.

5. Start the firmware update. For example, the following command upgrades the system with the firmware in the IPF_SX2000_SD_5_5d.depot file.

```
# /usr/bin/install_fw.sh -u -s /tmp/IPF_SX2000_SD_5_5d.depot \
FM_SX2000_SD
```

After the firmware is upgraded, the current partition will reset and boot HP-UX.

6. To verify that the firmware upgrade is successful, see Verify the HP-UX Firmware Update.
7. After the firmware upgrades successfully, enter the Management Processor PE command to power on any partitions or unassigned cells that were powered off before the upgrade.

Verifying the HP-UX Firmware Update

After the firmware updates, the system will reset and boot HP-UX. To verify whether the firmware update is successful, do the following:

- Log in to the Management Processor, enter `CM`, and enter the `SYSREV` command to display system firmware version information.
- For a product, view the results in the `/var/adm/osifm/osifm.out` file.

Updating Firmware on a Linux System

Downloading an HP OSIFM firmware package on a system running the Linux operating system downloads a file that contains the firmware package as a Smart Component. This section describes how to update firmware on an entry-class system that is running the Linux operating system. It describes the following tasks:

- Tasks to preform before updating firmware
- Upgrading firmware
- Verifying the firmware update

For procedures on how to downgrade or reinstall firmware, see the firmware package release notes.

NOTE: HP OSIFM is currently available only for entry-class systems running Linux.

Before Updating Firmware

The following lists tasks that you must complete before updating firmware on a system running the Linux operating system:

- Perform all the tasks listed in the prerequisites section in the firmware releases notes. For information on obtaining release notes for a firmware package, see step 7 in Downloading Firmware Packages.
- Schedule a time to update firmware when it is convenient to reboot the system.
- Review the HP *Support Line User Guide* or the HP support terms and conditions for precautions, scope of license, restrictions, and limitation of liability and warranties.
- Do not update firmware on the iLO Management Processor over the network while updating system firmware.
- Back up the system. For additional information, see the administration guide that came with the operating system.
- Clear the system event logs. Follow these steps to clear the system event logs:
  1. Establish a `telnet` session with the iLO Management Processor (MP).
  2. Log in to the iLO Management Processor as an administrator.
  3. Display the show logs menu, for example:

     # **SL**

     A show logs menu appears.
  4. At the `Enter menu item or [Ctrl-B] to Quit:` prompt, enter **`c`**.
  5. At the `Are you sure you want to clear all logs? (Y/[N]):` prompt, enter **`y`**.

     The following message appears:

     ```
     -> Logs have been cleared.
     ```

Upgrading Firmware

Follow these steps to upgrade the firmware on a system running the Linux operating system:

1. Log in as superuser.
2. Change to the `/tmp` directory, for example:

   # **`cd /tmp`**

3. Download the firmware package to the `/tmp` directory as described in Downloading Firmware Packages.

   A file named `CP`*nnnnnn*`.scexe` is downloaded, where *nnnnnn* indicates the Smart Component number.

4. Run the `CP`*nnnnnn*`.scexe` file, for example:

   `# ./CP`***nnnnnn*****`.scexe`**

5. Monitor the console during the firmware upgrade. During the upgrade you are prompted for the following responses:
   - When prompted for the firmware update type, Enter `0` (firmware upgrade).
   - When prompted for the firmware update mode, Enter `0` (firmware update).

     The resulting output displays the firmware versions on the system as compared to those in the package.

   Errors preventing the firmware update are listed in the `/var/cpq/Component.log` file. You must resolve errors before the upgrade can proceed.
   - Enter **`Y`** when prompted OK to proceed.
   - Enter **`Y`** when prompted OK to reboot.

   When the firmware upgrade is complete, the system will reset and boot Linux.

6. To verify if the firmware upgrade was successful, see Verifying the Linux Firmare Update.

The following options are supported for a Smart Component on an entry-class Integrity system:

Usage: `CP`*nnnnnn*`.scexe [options]`

Options:

`-f` Force the package installation. This option can force a reinstallation when the firmware versions are the same or a downgrade when the firmware version is older than the one installed.

`-g` Allow downgrade. This option can force a firmware downgrade only when the firmware version is older than the one installed. No reinstallation takes place if the firmware versions are the same.

`-s` Update in silent mode, which means no interaction. You must enter all options on the command line.

`-v` Display version information.

`-r` Reboot if required.

`-h` Display help.

Usage Examples:

To preview whether or not the firmware upgrade would be successful without actually performing the upgrade, enter:

`# ./CP`***nnnnnn*****`.scexe -p`**

To downgrade newer firmware to versions in the package with an automatic reboot and no user interaction, enter:

`# ./CP`***nnnnnn*****`.scexe -g -s -r`**

Verifying the Linux Firmware Update

After the firmware updates, the system will reset and boot Linux. To verify whether the firmware update is successful, do the following:

- Log in to the iLO Management Processor, enter `CM`, and enter the `SYSREV` command to display system firmware version information.
- View the results in the `/var/cpq/Component.log` file.

Updating Firmware on a Windows System

Downloading an HP OSIFM firmware package on a system running the Windows operating system downloads a file that contains the firmware package as a Smart Component. This section describes how to update firmware on an entry-class, mid-range, or high-end system that is running the Windows operating system. It describes the following tasks:

- Tasks to perform before updating firmware
- Upgrading firmware on an entry-class system
- Upgrading firmware on a mid-range or high-end system
- Verifying the firmware update

For procedures on how to downgrade or reinstall firmware, see the firmware package Release Notes.

Before Updating Firmware

The following lists the tasks that you must complete before updating firmware on a system running the Windows operating system:

- Perform all the tasks listed in the prerequisites section in the firmware releases notes. For information on obtaining release notes for a firmware package, see step 7 in Downloading Firmware Packages.
- Schedule a time to update firmware when it is convenient to reboot the system.
- Review the HP *Support Line User Guide* or the HP support terms and conditions for precautions, scope of license, restrictions, and limitation of liability and warranties.
- Do not update firmware on the iLO Management Processor over the network while updating system firmware.
- Back up the system. For additional information, see the administration guide that came with the operating system.
- Clear the system event logs. Follow these steps to clear the system event logs:
  1. Establish a `telnet` session with the iLO Management Processor.
  2. Log in to the iLO Management Processor as an administrator.
  3. Display the show logs menu, for example:

     `# SL`

     A show logs menu appears.
  4. At the `Enter menu item or [Ctrl-B] to Quit:` prompt, enter **`c`**.
  5. At the `Are you sure you want to clear all logs? (Y/[N]):` prompt, enter **`y`**.

     The following message appears:

     `-> Logs have been cleared.`

Upgrading Firmware on an Entry-Class System

Follow these steps to upgrade the firmware on an entry-class system that is running the Windows operating system:

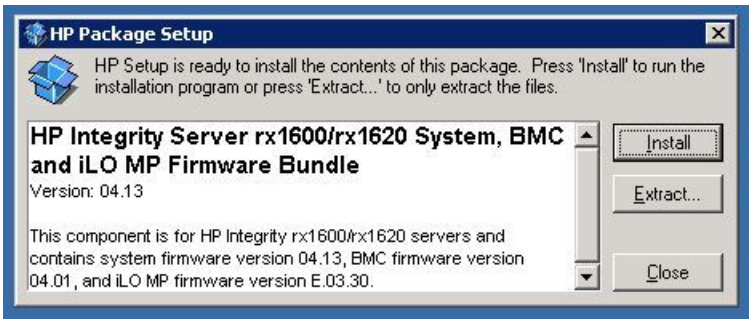
1. Log in as Administrator.
2. Download the firmware package as described in Downloading Firmware Packages.

   A file named cp*nnnnnn*.exe is downloaded, where *nnnnnn* indicates the Smart Component number.

3. Double-click the cp*nnnnnn*.exe file.

   The HP Package Setup window is displayed, as shown in Figure 2-1.

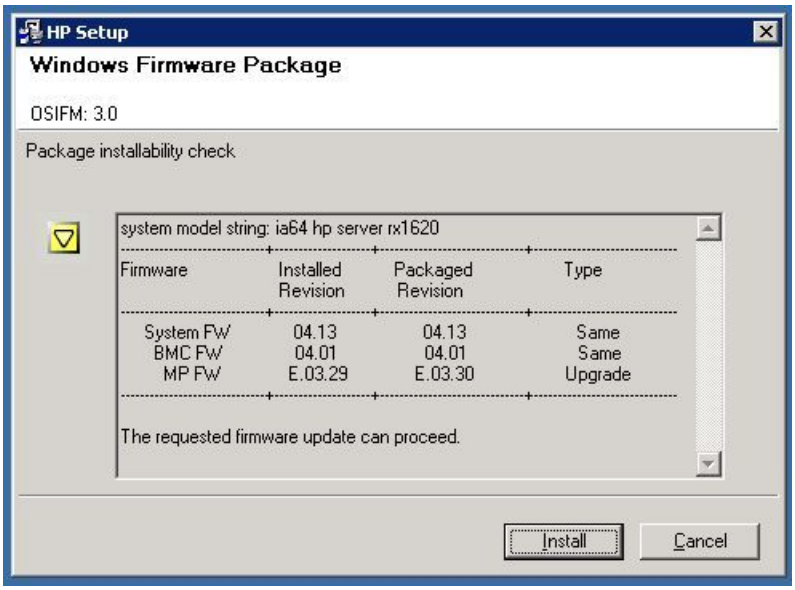
Figure 2-1 HP Package Setup


HP Package Setup
HP Setup is ready to install the contents of this package. Press 'Install' to run the installation program or press 'Extract...' to only extract the files.
HP Integrity Server rx1600/rx1620 System, BMC and iLO MP Firmware Bundle
Version: 04.13
This component is for HP Integrity rx1600/rx1620 servers and contains system firmware version 04.13, BMC firmware version 04.01, and iLO MP firmware version E.03.30.
Install
Extract...
Close

4. Click **Install**.

   The Package installability check window appears, displaying status information. No action is necessary. This window closes and another Package installability check window appears as shown in Figure 2-2. This window displays the firmware versions on the system as compared to those in the package and any errors that prevent the upgrade, which you must resolve before continuing.

Figure 2-2 Windows Entry-Class System Firmware Comparison


HP Setup
Windows Firmware Package
OSIFM: 3.0
Package installability check
system model string: ia64 hp server rx1620
Firmware | Installed Revision | Packaged Revision | Type
System FW | 04.13 | 04.13 | Same
BMC FW | 04.01 | 04.01 | Same
MP FW | E.03.29 | E.03.30 | Upgrade
The requested firmware update can proceed.
Install
Cancel

5. Click one of the following:
   - **Cancel** — to cancel the firmware upgrade and end this procedure without upgrading the firmware.
   - **Install** — to proceed with the firmware upgrade. The HP Setup Windows Firmware Package window appears with the results of the upgrade, as shown in Figure 2-3.

Figure 2-3 Windows Firmware Package Upgrade Results

HP Setup
Windows Firmware Package
OSIFM: 3.0
The package has been installed. Please review information about the firmware install process below.
The Windows firmware package has been successfully staged onto the system.
An OS reboot is required to finish the firmware installation completely. It may take up to 30 minutes or more before the firmware gets installed and the OS boots up again. Please do not reset the system when the firmware on the system is being updated.
Press the 'Reboot' button to reboot your system to install the firmware now, or press 'Cancel' to exit Setup.
Reboot
Cancel

6. Click **Reboot**.

   A Reboot Confirmation window is displayed.

7. Click **Yes**.

   The system resets and boots Windows.

8. To verify if the firmware upgrade was successful, see Verifying the Windows Firmware Update.

Upgrading Firmware on a Mid-Range or High-End System

Follow these steps to upgrade the firmware on a mid-range or high-end system running the Windows operating system:

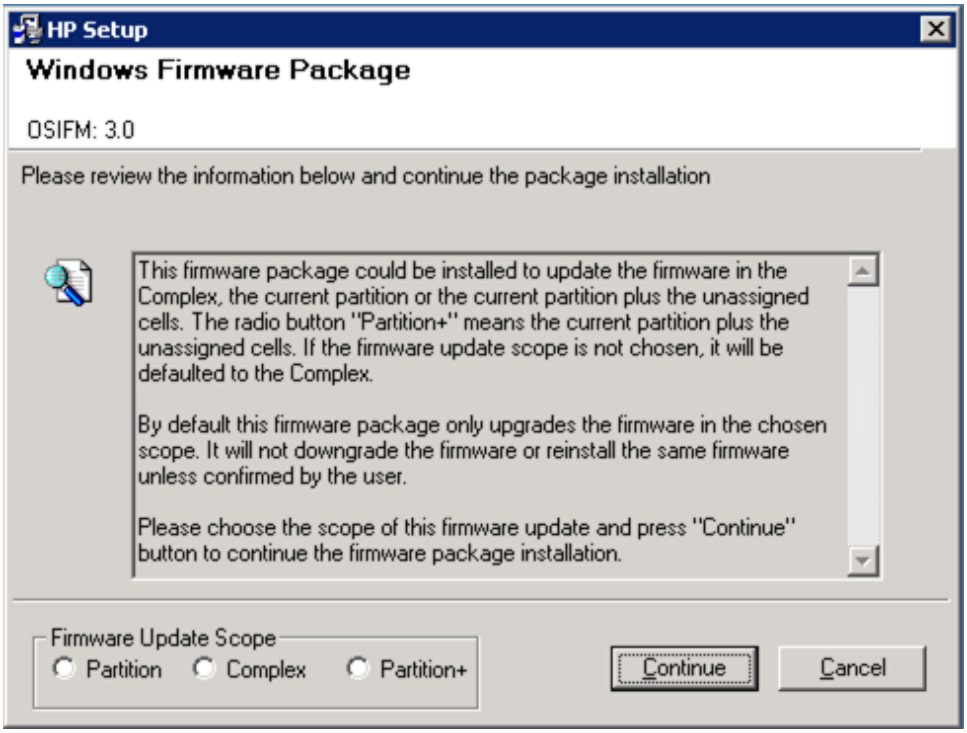
1. Select a Windows partition from the complex to download the firmware package.
2. Log in as administrator.
3. Download the firmware package as described in Downloading Firmware Packages .

   A file named cp*nnnnnn*.exe is downloaded, where *nnnnnn* indicates the Smart Component number.

4. Double-click the cp*nnnnnn*.exe file.

   The Windows Firmware Package dialog screen appears, as shown in Figure 2-4.

Figure 2-4 Windows Firmware Package Installation


HP Setup
Windows Firmware Package
OSIFM: 3.0
Please review the information below and continue the package installation
This firmware package could be installed to update the firmware in the Complex, the current partition or the current partition plus the unassigned cells. The radio button "Partition+" means the current partition plus the unassigned cells. If the firmware update scope is not chosen, it will be defaulted to the Complex.
By default this firmware package only upgrades the firmware in the chosen scope. It will not downgrade the firmware or reinstall the same firmware unless confirmed by the user.
Please choose the scope of this firmware update and press "Continue" button to continue the firmware package installation.
Firmware Update Scope
Partition
Complex
Partition+
Continue
Cancel

5. In the Firmware Update Scope section, select the type of upgrade:
   - **Partition** — for the current partition
   - **Complex** — for the whole complex
   - **Partition+** — for the current partition plus unassigned cells

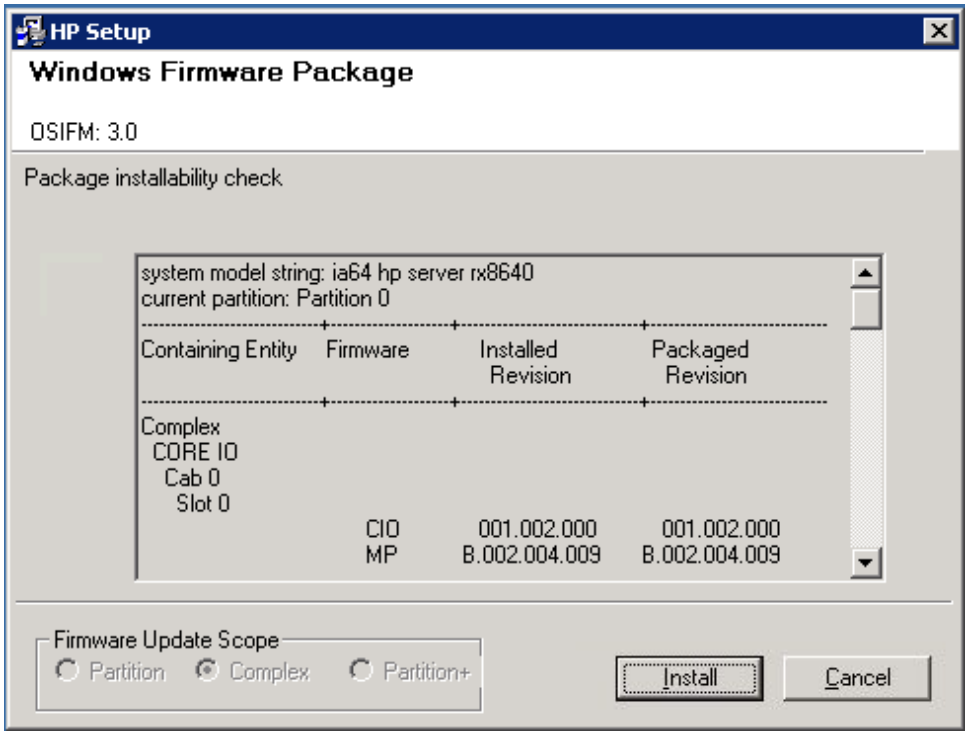
NOTE: HP does not support the use of Partition or Partition+ for mid-range systems.

6. Click **Continue**.

   The Package installability check window appears, displaying status information. No action is necessary. This window closes and another Package installability check window appears as shown in Figure 2-5. This window displays the firmware versions on the system as compared to those in the package and any errors that prevent the upgrade, which you must resolve before continuing.

   If you select complex and firmware that is the same as on the system, then you are prompted to reinstall. If you select to reinstall, the Package installability check dialog box displays a message about removing power, followed by a power cycle confirmation box. If instructed to remove power to the system, see Removing Power.

Figure 2-5 Windows Mid-Range and High-End System Firmware Comparison



7. Click one of the following:
   - **Cancel** — to cancel the firmware upgrade and end this procedure without upgrading the firmware.
   - **Install** — to proceed with the firmware upgrade. The HP Setup Windows Firmware Package window appears with the results of the upgrade, as shown in Figure 2-6.

Figure 2-6 Windows Firmware Package Upgrade Results

HP Setup
Windows Firmware Package
OSIFM: 3.0
The package has been installed. Please review information about the firmware install process below.
The Windows firmware package has been successfully staged onto the system.
An OS reboot is required to finish the firmware installation completely. It may take up to 30 minutes or more before the firmware gets installed and the OS boots up again. Please do not reset the system when the firmware on the system is being updated.
Press the 'Reboot' button to reboot your system to install the firmware now, or press 'Cancel' to exit Setup.
Reboot
Cancel

8. Click **Reboot**.

   A Reboot Confirmation window is displayed.

9. Click **Yes**.

   The system resets and boots Windows.

10. To verify that the firmware upgrade is successful, see Verifying the Windows Firmware Update.
11. After the firmware upgrades successfully, enter the Management Processor `PE` command to power on any partitions or unassigned cells that were powered off before the upgrade.

Verifying the Windows Firmware Update

After the firmware updates, the system resets and boots Windows. To verify whether the firmware update is successful, you can:

- Log in to the Management Processor, enter `CM`, and enter the `SYSREV` command to display system firmware version information.
- View the results in the `[SystemDrive]:\CPQSYSTEM\log\cpqresult.log` file.

3 Updating Firmware Using HP Offline Firmware Manager

Downloading an HP Offline Firmware Manager (OFM) firmware package, downloads a file that contains the firmware package as an `.ISO` image. From this image you create a CD to boot an Integrity system, independent of the installed operating system. However, you must have access to a system that is running an operating system and that has a CD burner and software to perform some tasks, such as downloading the firmware package and creating the CD.

This chapter addresses the following topics:

- Creating a CD
- Booting a System from a CD
- Starting the Firmware Manager
- Reviewing Release Notes
- Selecting and Updating firmware
- Verifying the Update
- Using HP OFM on Mid-Range and High-End Systems

During the firmware update process, do not reset or move the system, mount or eject media, interfere with reboots, or remove power (unless instructed). Any of these actions can cause the firmware update to fail and can leave the system in an unstable state.

Review all instructions and the HP *Support Line User Guide* or the HP support terms and conditions for precautions, scope of license, restrictions, and limitation of liability and warranties.

Creating a CD

Follow these steps from a system that is running an operating system to create a CD for an HP OFM firmware package:

1. Download the firmware package as described in Downloading Firmware Packages.
2. Uncompress the downloaded file using an uncompression utility, for example the WinZip utility.
3. Locate the uncompressed `.ISO` file.
4. Insert a blank CD into a CD burner, and use a CD burning application to burn the `.ISO` file to the blank CD.
5. When the CD creation is complete, move the CD to target system for firmware update.

Boot a System from a CD

Follow these steps to boot a system from a CD:

NOTE: If autoboot is enabled on the system, you will have only a limited amount of time to complete these steps before the operating system automatically boots.

1. Power on the system.

   The system boots to the EFI Boot Menu.
2. Insert the CD with the `.ISO` image into the CD drive.
3. From the EFI Boot Menu, select **Internal Bootable DVD** and press **Enter**.

   The system boots from the CD, and the HP Offline Firmware Manager Welcome window is displayed.

Starting the Firmware Manager

Follow these steps to start the HP OFM Firmware Manager:

1. On the HP Offline Firmware Manager Welcome window, select **OK** and press **Enter**.

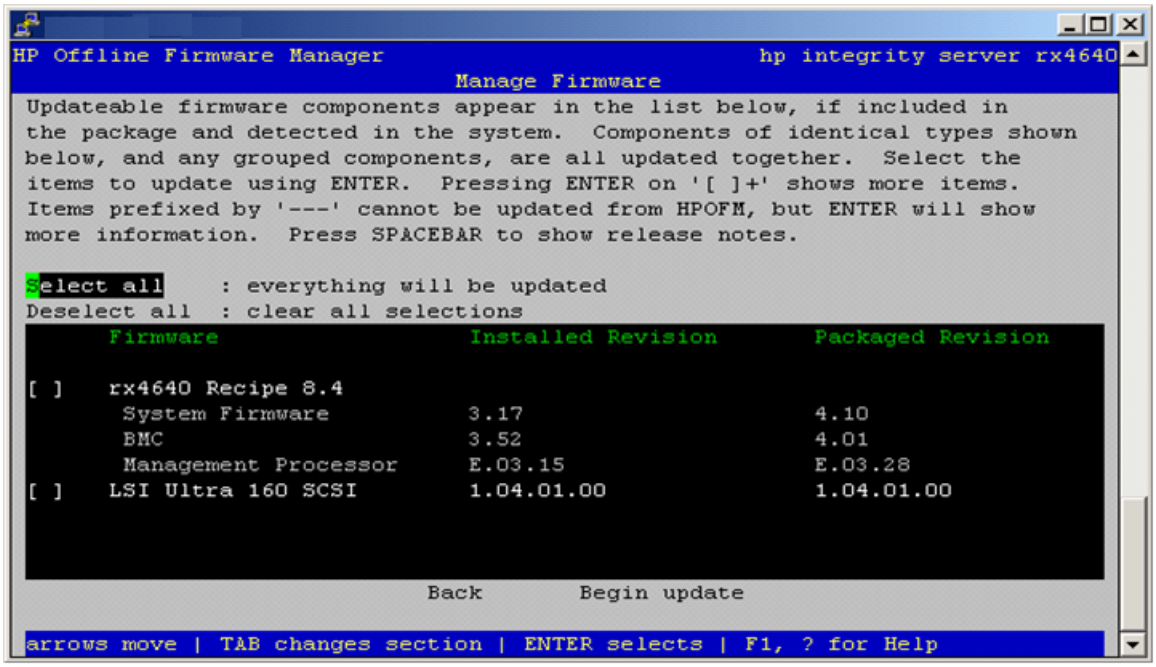
   The Update Firmware menu is displayed.

   There are some minor differences in the HP OFM Menu for entry-class, mid-range, and high-end systems.

2. From the Update Firmware menu, select **Manage Firmware** and press **Enter**.

   The Manage Firmware window is displayed, as shown in Figure 3-1

Figure 3-1 HP OFM Manage Firmware


HP Offline Firmware Manager
hp integrity server rx4640
Manage Firmware
Updateable firmware components appear in the list below, if included in the package and detected in the system. Components of identical types shown below, and any grouped components, are all updated together. Select the items to update using ENTER. Pressing ENTER on '[ ]+' shows more items. Items prefixed by '---' cannot be updated from HPOFM, but ENTER will show more information. Press SPACEBAR to show release notes.
Select all : everything will be updated
Deselect all : clear all selections
Firmware
Installed Revision
Packaged Revision
[ ] rx4640 Recipe 8.4
System Firmware 3.17 4.10
BMC 3.52 4.01
Management Processor E.03.15 E.03.28
[ ] LSI Ultra 160 SCSI 1.04.01.00 1.04.01.00
Back
Begin update
arrows move | TAB changes section | ENTER selects | F1, ? for Help

This menu is the primary interface for HP OFM. It displays:

- Usage instructions.
- A list of firmware updates in the package, the components to which they apply, the current firmware version number, and the update firmware version number.
  - A check box ([ ]) indicates that you can select the firmware for an update.

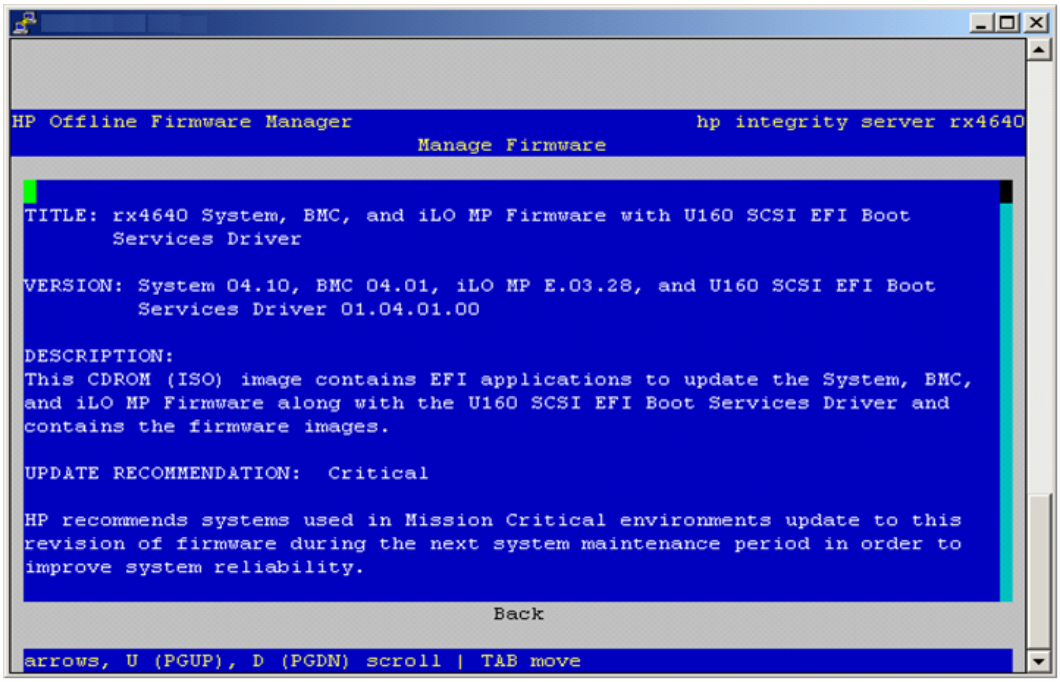
    Firmware and any indented components below it are a group and are updated together. You cannot update only some components in a group. Multiple instances of the same type of component are usually also considered as a group.
  - A series of dashes (---) indicates that you cannot select the firmware for an update. For example, older firmware might be incompatible with the newer system hardware. To display more information, select the firmware, then press **Enter**.
  - A plus sign (+) indicates that multiple instances of the firmware were detected. To view the instances, highlight the line containing the + and press **Enter**.

    A new window opens, listing each instance of that device present on the system.

Reviewing Release Notes

To review release notes for a firmware package, highlight the firmware entry and press the spacebar on the Manage Firmware window. The screen switches to a text reader that displays the release notes, similar to what is shown in Figure 3-2.

Figure 3-2 Viewing HO OFM Release Notes


HP Offline Firmware Manager
hp integrity server rx4640
Manage Firmware
TITLE: rx4640 System, BMC, and iLO MP Firmware with U160 SCSI EFI Boot Services Driver
VERSION: System 04.10, BMC 04.01, iLO MP E.03.28, and U160 SCSI EFI Boot Services Driver 01.04.01.00
DESCRIPTION:
This CDROM (ISO) image contains EFI applications to update the System, BMC, and iLO MP Firmware along with the U160 SCSI EFI Boot Services Driver and contains the firmware images.
UPDATE RECOMMENDATION: Critical
HP recommends systems used in Mission Critical environments update to this revision of firmware during the next system maintenance period in order to improve system reliability.
Back
arrows, U (PGUP), D (PGDN) scroll | TAB move

Selecting and Updating Firmware

Follow these steps to select and update firmware:

1. From the Manage Firmware window, select the firmware to update. To select:
   - All possible updates, press **Enter**, which selects the default of **Select all**.
   - Individual updates, press **Tab** and arrow keys until the cursor is on the check box (`[ ]`) associated with an update, then press **Enter**.

   An `X` will appear in each selection box, indicating that the firmware will be updated.

   To deselect, press **Tab** and arrow keys until the cursor is on the check box (`[ ]`) associated with an update and press **Enter** or select **Deselect all** to clear all selections.

   For information about selecting partitions and cells on a mid-range or high-end system, see Using HP OFM on Mid-Range and High-End Systems.

2. Select **Begin update**.

   The firmware update process beings.

3. Monitor the console during the firmware update.

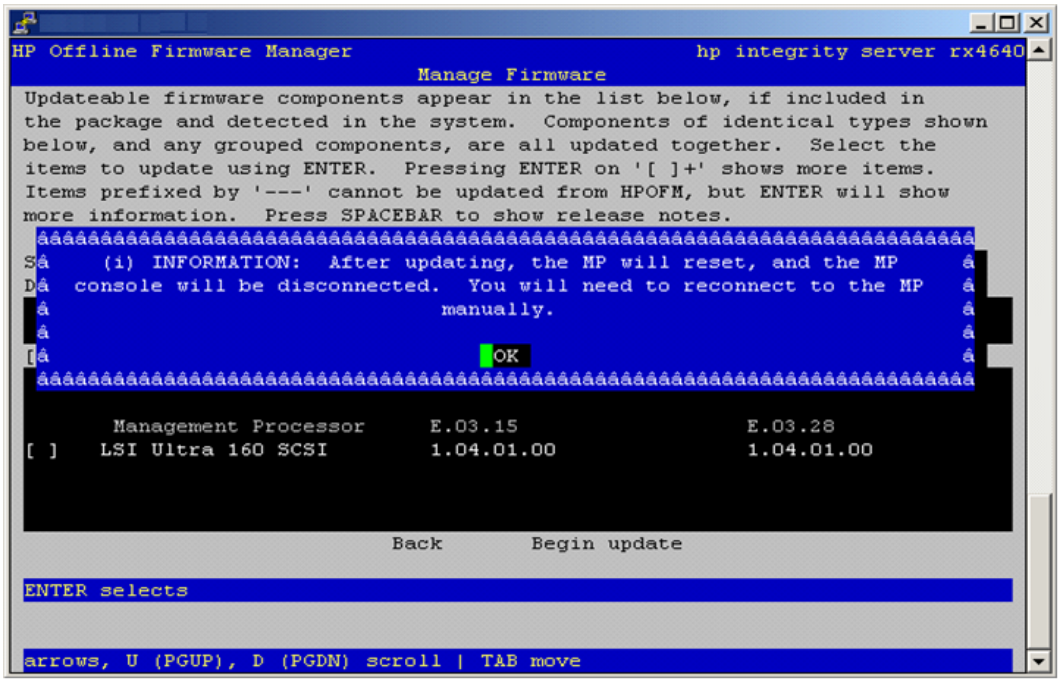
   During the update, you might be prompted to confirm certain actions and will be prompted for the EFI password if the EFI shell is protected by an administrator password.

   The system will reboot and might require multiple reboots, depending on each firmware update requirement. After each reboot, HP OFM will automatically restart using a Firmware Update boot option.

   If the reboot sequence is interrupted, the firmware update will be incomplete. In this case, exit to the EFI Boot Manager and manually select the **Firmware Update** option to complete the update cycle.

4. If the Management Processor firmware was updated, the Management Processor will reset and the message shown in Figure 3-3 will be displayed. At this time, you must reestablish any `Telnet` session to view the results.

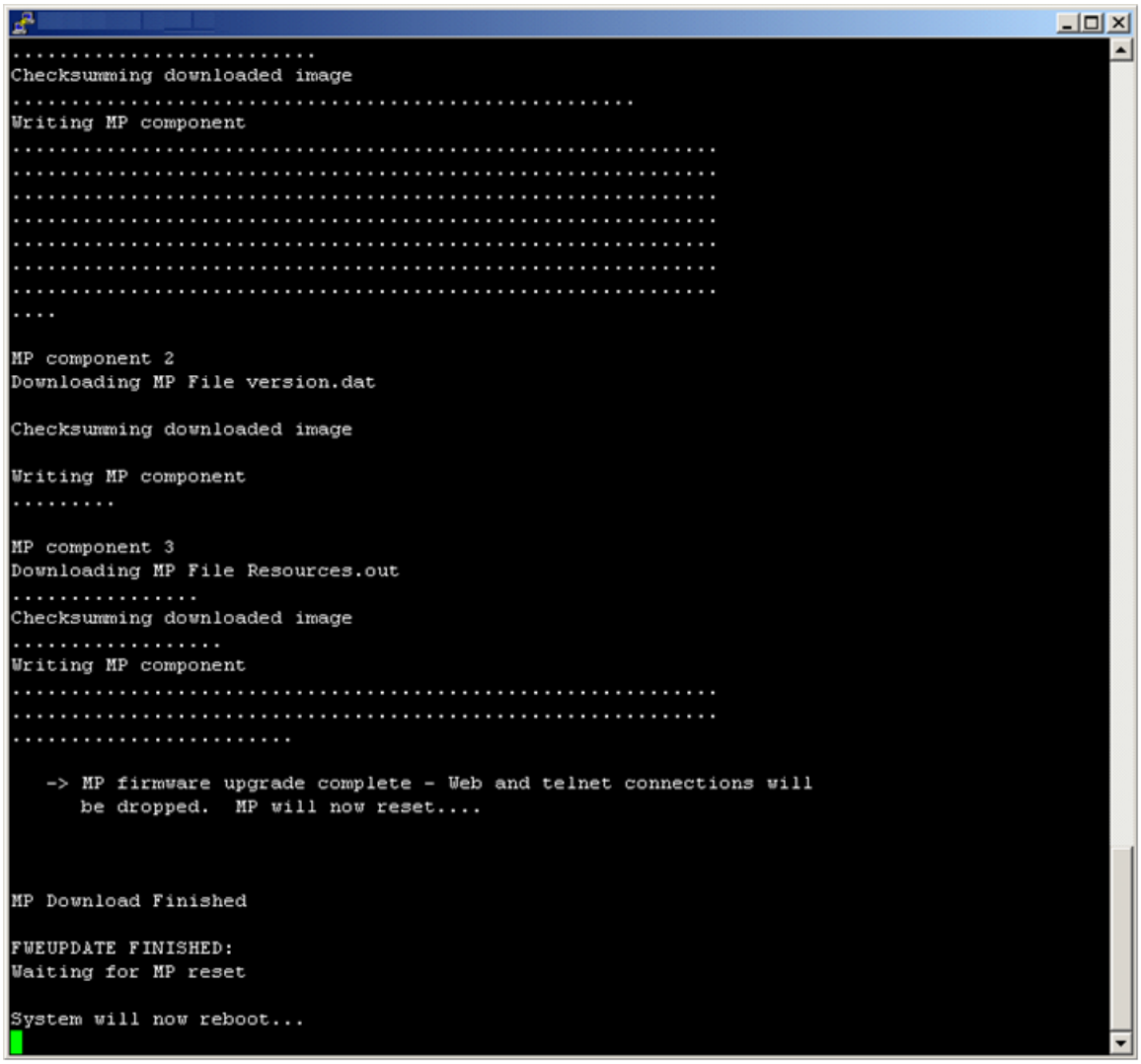
Figure 3-3 Management Processor Reset


HP Offline Firmware Manager
hp integrity server rx4640
Manage Firmware
Updateable firmware components appear in the list below, if included in
the package and detected in the system. Components of identical types shown
below, and any grouped components, are all updated together. Select the
items to update using ENTER. Pressing ENTER on '[ ]+' shows more items.
Items prefixed by '---' cannot be updated from HPOFM, but ENTER will show
more information. Press SPACEBAR to show release notes.
(i) INFORMATION: After updating, the MP will reset, and the MP
console will be disconnected. You will need to reconnect to the MP
manually.
OK
Management Processor E.03.15 E.03.28
[ ] LSI Ultra 160 SCSI 1.04.01.00 1.04.01.00
Back
Begin update
ENTER selects
arrows, U (PGUP), D (PGDN) scroll | TAB move

5. A final confirmation screen is displayed. Select **Continue**.

   Progress of the firmware update is displayed, as shown in Figure 3-4. Monitor the progress. If instructed to remove power to the system, see Removing Power.

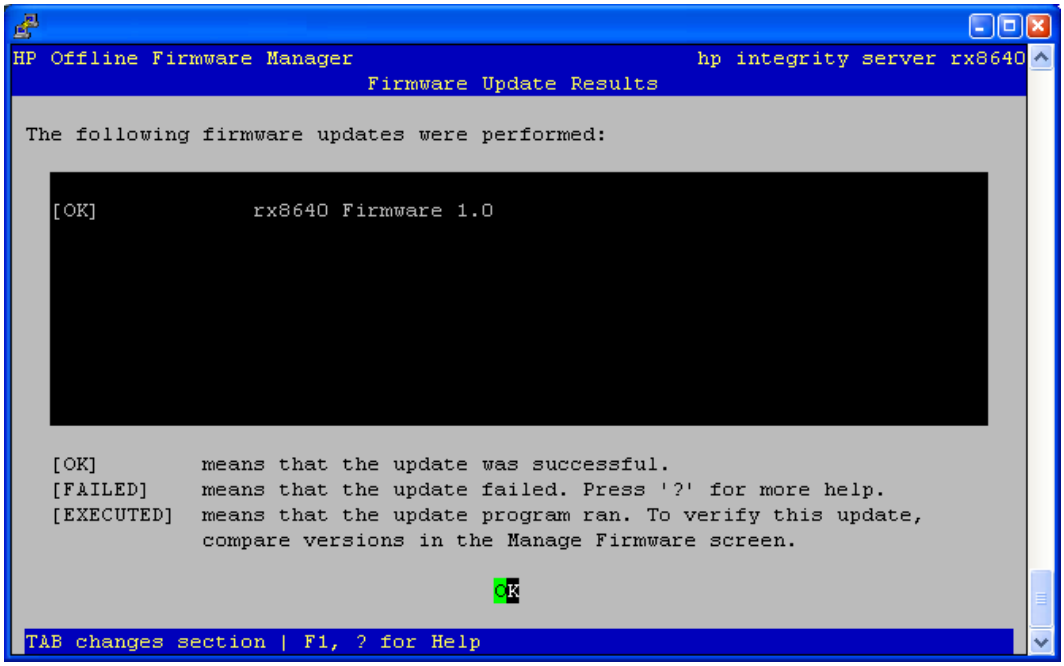
Figure 3-4 HP OFM Update Progress



Verifying the Update

After all firmware updates complete, a Firmware Update Results screen is displayed, as shown in Figure 3-5.

Figure 3-5 HP OFM Results


HP Offline Firmware Manager
hp integrity server rx8640
Firmware Update Results
The following firmware updates were performed:
[OK] rx8640 Firmware 1.0
[OK] means that the update was successful.
[FAILED] means that the update failed. Press '?' for more help.
[EXECUTED] means that the update program ran. To verify this update, compare versions in the Manage Firmware screen.
OK
TAB changes section | F1, ? for Help

The following lists the possible results:

[OK] The firmware update was successful without any errors.

[FAILED] The firmware update was not successful. This line is followed by an error status message providing detail. Up to 20 failing instances are stored.

Failures could be due to an update program error, version error, a problem with the device, trouble reading the disk, an unexpected system reset, or a problem with the EFI environment. Check the firmware release notes for more information.

Although unusual, it is also possible that the EFI environment has exhausted its NVRAM memory, and you must delete some EFI variables by using the `set -d <var>` EFI Shell command. This event is indicated by a warning message on exit from the Manage Firmware screen.

You can perform a failed update again by selecting the device from the Manage Firmware screen. If the update continues to fail, check the hardware.

△ **CAUTION:** An update failure can corrupt firmware and render the system unstable. If the system or its devices stop functioning after a firmware update, contact HP Support for assistance.

[EXECUTED] The update program does not return status codes indicating whether the update was successful or failed. To determine if the update was successful, select **OK**, then revisit the Manage Firmware screen and verify that the Installed Revision and Packaged Revision match.

Closing the results screen returns to the Main menu, where you may choose more updates or exit HP Offline Firmware Manager. To complete the process, select `Exit` on the main screen and press **Enter** to exit HPOFM and return to the EFI environment.

Using HP OFM on Mid-Range and High-End Systems

For mid-range and high-end systems, the Manage Firmware screen format differs from the format for entry-class systems. The screen is divided into blocks, starting with shared firmware components, followed by firmware for each partition listed by number and by any unassigned

cells that are present. Within each block, firmware components are ordered by cabinet number followed by cell number.

The current partition (on which HP OFM is running) is identified by a > pointer and labeled Current Partition. Any firmware that can be updated is listed within the block for the current partition.

Shared firmware components appearing in the first block are special. Those not requiring a full complex update are automatically selected by the system. The rest require manual selection and can only be selected if the system is eligible for a full complex update (security privileges are correct and all partitions and unassigned cells are eligible for update.) You can then select the check box if you want to update the shared components as part of a full complex update (all other boxes must also be checked). If some partitions, unassigned cells, or shared components themselves are not eligible for update, the shared components are marked by dashes instead of a check box, and a full complex update is not possible, although the system can still update the automatically selected components.

You can select different portions of a cellular system for update, depending on system model, the nPartition Configuration Privilege enabled for the system by the Management Processor `PARPERM` command, and the firmware update permissions granted to the current partition by the Management Processor `SO` command.

This section describes firmware update options for partitions and cells on a mid-range or high-end system.

Updating the Current Partition

Follow these steps to update the firmware on the current partition:

1. Ensure that permissions are set correctly on the partition as described in the release notes.
2. Select the check box for the Current Partition.
3. Select **Begin update**.

To downgrade the current partition to older firmware, you must downgrade the entire complex.

Updating Different Partitions

Follow these steps to update the firmware on a different partition:

1. Shut down the partition's operating system to the Reset for Reconfiguration state.
2. Set Complex Wide permissions as described in the release notes.
3. Select the check box for the desired partition or partitions.
4. Select **Begin update**.
5. If the partition's operating system is not in the `RR` state (as indicated by dashes), exit HP OFM, check the state of the operating system, and retry the update.

Updating Unassigned Cells

Follow these steps to update the firmware on unassigned cells:

1. Set Complex Wide permissions as described in the release notes.
2. Select the check box for the unassigned cells (at the end of the display) and at least one partition.
3. Select **Begin update**.

   All unassigned cells will be updated together.

Removing Power

Under certain condition, such as complex-wide reinstallations, a firmware update might require temporarily removing all power from the system to cause the affected hardware to activate its

new firmware. If this action is required, a warning message is displayed before the update begins. When the updates have begun and it is time to remove power, the following power-cycle message is displayed on the console, indicating that you have 30 minutes to cycle the power; the amount of time remaining will count down as the minutes elapse:

```
WARNING: Activating the new firmware requires cycling ALL input A.C. power to the system.
Please switch off the UPS or circuit breakers NOW.  Wait 30 seconds, then follow your
system's power-up procedure to restore power.

You have 30 minutes remaining to begin this action
```

Having received the advance warning, you should periodically check the console for the power-cycle message. Follow these steps when the message is displayed:

1. Perform an orderly power shutdown using Management Processor `PE` commands or equivalent to turn off all power to the system.
2. Physically switch off circuit breakers or unplug power cords, starting with expansion cabinets (if present) and finishing with the main cabinet.
3. Wait 30 seconds, then restore power.
4. Reconnect the Management Processor to your original firmware-update session.

If you fail to cycle power within 30 minutes, an error is displayed and the system will be operating in an unsupported state, possibly with a combination of new and old firmware. Although the system usually continues to run in this unsupported state, HP recommends that you immediately perform the update again, and perform the power cycle when requested within 30 minutes.

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